

REMARKS

The presently claimed invention features methods for preparing acids-enriched and acids-reduced fruit and vegetable juices, concentrates and powders as well as bended juice products. The currently claimed methods entail dividing a flow of juice into at least three juice streams that are treated and combined in various ways to create juices and other juice products having an altered acid content. The methods of the invention allow one to easily control the relative acidity of the juices and juice products created.

Claims 1-40 have been cancelled. Support for new claims 41-58 is found, for example, in the original claims. Support for new claims 59-61 is found, for example, on page 5 of the specification.

Rejections Under 35 U.S.C. §112, second paragraph

The Examiner rejected claims 1-40 as allegedly indefinite in reciting "combining the acids-reduced juice fraction with a second portion of the fruit to create a acids-reduced fruit juice." The Examiner stated that it is "not clear whether the second portion of the fruit juice is a different juice than the previously separated juice."

Claims 1-40 have been cancelled. New claims 41-61 clearly identify a first juice stream, a second juice stream and a third juice stream and specify how the streams are treated and combined. In view of the forgoing, Applicants respectfully request that the rejections under 35 U.S.C. §112, second paragraph be withdrawn.

Rejections Under 35 U.S.C. §102(b)

The Examiner rejected previously pending claims 1 and 7 as allegedly anticipated by Japanese Patent Application No. 18971, found in Puri (U.S. Patent 4,439,458) or Puri alone.

Puri discloses passing a juice over an anion exchange resin to create an "acid removed fruit" that is combined with a "nonacid removed fruit juice." According to Puri, Japanese Patent Application No. 18971 discloses:

a process for producing a citrus fruit juice which comprises the steps of subjecting fruit juice prepared by squeezing and separating in a conventional manner and sterilized as required by centrifugal separation or enzymatic treatment followed by filtration to obtain a fruit juice having insoluble solids contents of less than 0.5% (v/v), then treating same with anion exchange resins, and mixing the thus acid removed fruit juice with a nonacid removed fruit juice having insoluble solids content of more than 0.5% (v/v) in an adequate amount. Exemplified [sic] is use of an anion exchange resin regenerated with an aqueous sodium hydroxide solution. (Puri, col. 3, line 16-30)

Thus, both Puri and Japanese Patent Application No. 18971 as described in Puri teach using an anion exchange column to create an acids-reduced juice.

Independent claim 41 entails: dividing a flow of fruit juice "into at least a first juice stream, a second juice stream and a third juice stream" and then "treating the first juice stream to preferentially remove acidic compounds thereby creating an acids-enriched juice stream and an acids-reduced juice stream." Claim 50 is identical, except that the juice is a vegetable juice. The remaining claims depend from either claim 41 or claim 50.

Puri does not disclose or suggest treating a juice stream so as to create an acid enriched-juice stream and an acids-reduced juice stream. Puri creates an acid-reduced juice fraction by passing juice over an anion exchange column. There is nothing in Puri suggesting that an acids-enriched juice stream should be generated, much less any suggesting as to how this could be accomplished. Puri does regenerate the anion exchange resin (col. 7, lines 10-15), but this does not amount to the production of a acids-enriched juice stream. In any event, the material removed during regeneration is treated as waste.

In view of the forgoing, it is clear that the cited references cannot anticipate any of the pending claim, and Applicants respectfully request that the rejections under 35 U.S.C. §102(b) be withdrawn.

Rejections Under 35 U.S.C. §103

Puri and Dechow

The Examiner rejected previously pending claims 1-8 and 21-28 as allegedly obvious in view of Japanese Patent Application No. 18971, found in Puri (U.S. Patent 4,439,458) or Puri

taken with Dechow et al. (U.S. Patent 4,522,836). Referring to previously pending claim 2, the Examiner stated that since "it is known to remove acid from fruit juice and to combine it with another fruit juice, it would have been obvious to the acid enriched fruit juice with the opposite, i.e., juices needing an acid taste."

Puri is discussed above. Dechow et al. discloses passing a juice through a partially fluidized bed of an anion exchange resin (col. 7, lines 40-60) to create an lower juice (col. 10, lines 23-28). Dechow also discloses combining this "treated reduced acid product with an untreated juice." (col. 10, lines 39-43). Neither Puri nor Dechow et al. teaches or suggests combining an acids-enriched juice with an untreated juice as required by pending claims 41 and 50. Neither Puri nor Dechow et al. teaches or suggests any method for generating an acids-enriched juice as required by pending claims 41 and 50. Neither Puri nor Duchow et al. teaches or suggests a method for treating a "juice stream to preferentially remove acidic compounds thereby creating an acids-enriched juice stream and an acids-reduced juice stream" as required by pending claims 41 and 50. Thus, the cited references, no matter how combined cannot render either claim 41 or claim 50 obvious. The remaining pending claims depend from either claim 41 or claim 50. Thus, the cited references cannot render any of the pending claims obvious.

Puri, Dechow and Perry

The Examiner rejected previously claim 8 as allegedly obvious in view of Puri or Dechow et al. and Perry et al. (U.S. Patent No. 5,057,197). According to the Examiner, Perry et al. teaches a method for removing acids "with a non-electrodialysis membrane which has a pore size of 0.1 to 1.0 nanometers". The Examiner argued that "it would have been obvious to remove acids using nanofiltration in the process or Puri or Dechow et al."

As discussed above, neither Puri nor Dechow et al. teaches or suggests combining an acids-enriched juice with an untreated juice as required by claims 41 and 50. Neither Puri nor Dechow et al. teaches or suggests any method for generating an acids-enriched juice as required by claims 41 and 50. Neither Puri nor Dechow et al. teaches or suggests a method for treating a "juice stream to preferentially remove acidic compounds thereby creating an acids-enriched juice stream and an acids-reduced juice stream" as required by claims 41 and 50. While Perry et al. teaches removing acids from a citrus juice using certain membranes, Perry et al. does not provide any teaching to combine an enriched juice with an untreated juice, any method for generating an

acids-enriched juice, or any method for treating a "juice stream to preferentially remove acidic compounds thereby creating an acids-enriched juice stream and an acids-reduced juice stream", all of which are required by claims 41 and 50. All of the pending claims depend, directly or indirectly, from either claim 41 or claim 52. Thus, the cited references, no matter how combined, cannot anticipate any of the pending claims.

Puri, Dechow, and Gresch

The Examiner rejected previously pending claim 9-20 and 29-40 as allegedly obvious in view of Japanese Patent Application No. 18971, found in Puri (U.S. Patent 4,439,458) or Puri taken with Dechow et al. and Gresch (U.S. Patent 5,496,577).

Gresch teaches a process that entails dividing a juice stream into two streams prior to a desugarization process.

According to the invention ... the raw juice is divided before the desugarization process by a preliminary separation into two streams, of which one stream, relative to the raw juice, has a lower acid/sugar ratio and a second stream having a higher acid/sugar ratio and a lower sugar content, and in that the first stream is fed to the desugarization process and the second stream to the low-sugar juice after the desugarization. (Gresch, col. 1, lines 46-54)

Thus, while Gresch teaches creating juice streams with altered acid/sugar ration, this is achieved by altering sugar content, not by altering acid content. Moreover, Gresch teaches recombining the two streams having altered acid/sugar ratios. This is in contrast to the presently claimed invention in which the acid-reduced stream is combined with a stream that has not been treated to alter acid content and the acid-enhanced stream is separately combined with a stream that has not been treated to alter the acid content. Thus, the cited references, no matter how combined, cannot render the present claims obvious.

In view of the forgoing, Applicants respectfully request that the rejections under 35 U.S.C. §103 be withdrawn.